

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method for improving data processing in connection with a database having restrictions therein, said method comprising:

defining a dimension comprising a plurality of attributes;

assigning each attribute to a respective column of said database having restrictions therein;

defining relationships between said attributes of the defined dimension, said defined relationships not being subject to said restrictions of said database, said defined relationships establishing a first hierarchy of the attributes with respect to the defined dimension;

defining new relationships between said attributes of the defined dimension, said new defined relationships establishing a second hierarchy of the attributes with respect to the defined dimension:

said new relationships not being subject to said restrictions of the database; and

said new relationships of the second hierarchy modifying at least one relationship of the first hierarchy between said attributes; and

accessing said database via a query that employs at least one of the first hierarchy and the second hierarchy of said dimension without modifying the dimension, and displaying a result corresponding to the query to a user,

wherein the first hierarchy and the second hierarchy share at least one common attribute from the defined dimension, the first hierarchy has at least one attribute from the defined dimension not present in the second hierarchy, and the second hierarchy has at least one attribute from the defined dimension not present in the first hierarchy.

2. (Canceled)
3. (Previously Presented) A method in accordance with claim 1, further comprising:

defining at least one hierarchy comprising a sequence of said attributes, at least one of said attributes included in said defining relationships step.
4. (Original) A method in accordance with claim 3, wherein each hierarchy defines a drill down path for accessing said database.
5. (Original) A method in accordance with claim 3, wherein a hierarchy contains one attribute.
6. (Original) A method in accordance with claim 3, wherein said act of defining said at least one hierarchy is independent of said database.
7. (Canceled)
8. (Original) A method in accordance with claim 1, wherein said database is a relational database.

9. (Original) A method in accordance with claim 1, wherein said dimension is utilized with an on line analysis processing (OLAP) system.

10. (Canceled)

11. (Currently Amended) A computer-readable storage medium having computer-executable instructions for improving data processing in connection with a database having restrictions therein, by performing acts comprising:

defining a dimension comprising a plurality of attributes;

assigning each attribute to a respective column of said database having restrictions therein;

defining relationships between said attributes of the defined dimension, said defined relationships not being subject to said restrictions of said database, said defined relationships establishing a first hierarchy of the attributes with respect to the defined dimension;

defining new relationships between said attributes of the defined dimension, said new defined relationships establishing a second hierarchy of the attributes with respect to the defined dimension:

said new relationships not being subject to said restrictions of the database; and

said new relationships of the second hierarchy modifying at least one relationship of the first hierarchy between said attributes; and

accessing said database via at least one of the first and second hierarchies of said dimension without modifying the dimension.

wherein the first hierarchy and the second hierarchy share at least one common attribute from the defined dimension, the first hierarchy has at least one attribute from the defined dimension not present in the second hierarchy, and the second hierarchy has at least one attribute from the defined dimension not present in the first hierarchy.

12. (Canceled)

13. (Previously Presented) A computer-readable storage medium in accordance with claim 11, further having computer-executable instructions for defining at least one hierarchy comprising a sequence of attributes, at least one of said attributes included in said defining relationships step.

14. (Previously Presented) A computer-readable storage medium in accordance with claim 13, wherein each hierarchy defines a drill down path for accessing said database.

15. (Previously Presented) A computer-readable storage medium in accordance with claim 13, wherein a hierarchy contains one attribute.

16. (Previously Presented) A computer-readable storage medium in accordance with claim 13, wherein said act of defining said at least one hierarchy is independent of said database.

17. (Canceled)

18. (Previously Presented) A computer-readable storage medium in accordance with claim 11, wherein said database is a relational database.

19. (Previously Presented) A computer-readable storage medium in accordance with claim 11, wherein said dimension is utilized with an on line analysis processing (OLAP) system.

20. (Currently Amended) A system for accessing a database having restrictions therein, said system comprising:

a processor coupled to a storage device, said storage device comprising said database;

a first definition component for defining a dimension comprising a plurality of attributes;

an assignment component for assigning each attribute to a respective column of said database;

defining relationships between said attributes of the defined dimension, said defined relationships not being subject to said restrictions of said database, said defined relationships establishing a first hierarchy of the attributes with respect to the defined dimension, said second component defining new relationships between said attributes of the defined dimension, said new defined relationships establishing a second hierarchy of the attributes with respect to the defined dimension:

said new relationships not being subject to said restrictions of the database; and

said new relationships of the second hierarchy modifying at least one relationship of the first hierarchy between said attributes; and

an access component for allowing access to said database via at least one of the first and second hierarchies of said dimension without modifying the dimension,

wherein the first hierarchy and the second hierarchy share at least one common attribute from the defined dimension, the first hierarchy has at least one attribute from the defined dimension not present in the second hierarchy, and the second hierarchy has at least one attribute from the defined dimension not present in the first hierarchy.

21. (Previously Presented) A system in accordance with claim 20, further comprising:

a third definition component for defining at least one hierarchy within each dimension, each hierarchy comprising a sequence of attributes, at least one of said attributes included in a relationship defined by said second definition component.
22. (Original) A system in accordance with claim 21, wherein each hierarchy defines a drill down path for said access component.
23. (Original) A system in accordance with claim 21, wherein a hierarchy contains one attribute.
24. (Original) A system in accordance with claim 21, wherein said third definition component defines said at least one hierarchy independent of said database.
25. (Canceled)

26. (Original) A system in accordance with claim 20, wherein said system is utilized with an on line analysis processing (OLAP) system.

27. (Currently Amended) A system embodied in computer hardware, the system for accessing a database having restrictions therein, said system comprising:

means for defining a dimension comprising a plurality of attributes;

means for assigning each attribute to a respective column of said database having restrictions therein;

means for defining relationships between said attributes of the defined dimension, wherein said defined relationships are not subject to said restrictions of said database, said defined relationships establishing a first hierarchy of the attributes with respect to the defined dimension;

means for defining new relationships between said attributes of the defined dimension, said new defined relationships establishing a second hierarchy of the attributes with respect to the defined dimension, wherein:

said new relationships are not subject to said restrictions of the database; and

said new relationships of the second hierarchy modify at least one relationship of the first hierarchy between said attributes; and;

means for accessing said database via at least one of the first hierarchy and the second hierarchy of said dimension without modifying the dimension,

wherein the first hierarchy and the second hierarchy share at least one common attribute from the defined dimension, the first hierarchy has at least one attribute from the defined

dimension not present in the second hierarchy, and the second hierarchy has at least one attribute from the defined dimension not present in the first hierarchy.

28. (Canceled)

29. (Previously Presented) A system in accordance with claim 27, wherein at least one of the first hierarchy and the second hierarchy is defined independent of said database.

30. (Original) A system in accordance with claim 27, wherein said system is an on line analysis processing (OLAP) system.

31. (Original) A system in accordance with claim 27, wherein said means for defining a dimension, means for assigning, means for defining relationships, means for accessing and means for defining at least one hierarchy comprise at least one application programming interface (API).

32. (Previously Presented) A computer-readable storage medium in accordance with claim 11 comprising a data structure comprising:

the dimension comprising the plurality of attributes, wherein each attribute is bound to a column in a database; and

a logical structure indicative of relationships between said plurality of attributes, wherein said relationships are not subject to said restrictions placed on said database.

33. (Previously Presented) A computer-readable storage medium in accordance with claim 32, said data structure further comprising at least one hierarchy comprising a sequence of attributes, at least one of said attributes included in said defining relationships step.

34. (Previously Presented) A computer-readable storage medium in accordance with claim 33, wherein each hierarchy provides a drill down path for accessing said database.

35. (Previously Presented) A computer-readable storage medium in accordance with claim 33, wherein a hierarchy contains a single attribute.

36. (Previously Presented) A computer-readable storage medium in accordance with claim 33, wherein each sequence is defined independent of said restrictions associated with said database.

37. (Previously Presented) A computer-readable storage medium in accordance with claim 32, wherein said logical structure is defined independent of said restrictions associated with said database.

38. (Previously Presented) A computer-readable storage medium in accordance with claim 32, wherein said database is a relational database.

39. (Previously Presented) A computer-readable storage medium in accordance with claim 32, wherein said database is capable of being utilized with an online analytical processing (OLAP) system.

40. (Currently Amended) A method for retrieving data from a database having restrictions therein, said method comprising:

receiving a data retrieval request including a dimension, wherein:

said dimension includes a plurality of attributes;

each attribute is assigned to a respective column of said database;

at least one relationship between said attributes of the defined dimension is defined[[,:]];

said at least one defined relationship not being subject to said restrictions of said database, said defined relationships establishing a first hierarchy of the attributes with respect to the defined dimension;

new relationships are defined between said attributes of the defined dimension, said new defined relationships establishing a second hierarchy of the attributes with respect to the defined dimension;

said new relationships not being subject to said restrictions of the database; and

said new relationships of the second hierarchy modifying at least one relationship of the first hierarchy between said attributes; and

retrieving said data from said database via a query that employs at least one of the first and second hierarchies of said dimension without modifying the dimension, and displaying a result corresponding to the query to a user,

wherein the first hierarchy and the second hierarchy share at least one common attribute from the defined dimension, the first hierarchy has at least one attribute from the defined dimension not present in the second hierarchy, and the second hierarchy has at least one attribute from the defined dimension not present in the first hierarchy.

41. (Original) A method in accordance with claim 40, further comprising:

providing said retrieved data in response to said data retrieval request.
42. (Previously Presented) A method in accordance with claim 40, said data retrieval request further including at least hierarchy comprising a sequence of said attributes, where at least one of said attributes is included in the said at least one defined relationship.
43. (Original) A method in accordance with claim 42, wherein each hierarchy provides a drill down path for accessing said database.
44. (Original) A method in accordance with claim 42, wherein a hierarchy contains a single attribute.
45. (Previously Presented) A method in accordance with claim 42, wherein each sequence is defined independent of said restrictions associated with said database.

46. (Previously Presented) A method in accordance with claim 40, wherein said relationships between said attributes are defined independent of said restrictions associated with said database.

47. (Original) A method in accordance with claim 40, wherein said database is a relational database.

48. (Original) A method in accordance with claim 40, wherein said database is capable of being utilized with an online analytical processing (OLAP) system.